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TO: File

THRU: Joe Helfrich, Permit Supervisor *JCH*

FROM: Robert Davidson, Reclamation Soil Scientist *RAD*

RE: Abatement for N98-45-1-1, Genwal Resources, Inc., Crandall Canyon Mine, ACT/015/032-98B, Folder #2, Emery County, Utah

SYNOPSIS

During culvert installation and pad construction, topsoil was removed from Map Unit C (Figure 8B) in preparation for the permanent coal storage area. However, during coal storage and stockpiling activities, coal was pushed up beyond area C where topsoil had not been stripped. As a result, Notice of Violation N98-45-1-1 was issued for failure to conduct mining and reclamation operations only as prescribed in the approved mining and reclamation plan and failure to remove topsoil from an area to be disturbed.

To abate N98-45-1-1, Genwal Resources, Inc. have presented an amendment for the Mine Reclamation Plan to salvage additional soils from the southern hillside adjacent and in the immediate vicinity of the coal pile. The amendment also updates soil salvage volumes for soil removed during culvert installation to expand across Crandall Canyon Creek. The amendment shows how soils in the coal pile area will be cleaned and protected from future disturbance.

ENVIRONMENTAL RESOURCE INFORMATION SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The current Mine Reclamation Plan adequately presents environmental resource information describing soils within the surface facility expansion area, including the south slope located adjacent to the current coal pile as follows:

- Supplemental soil surveys present information which delineate the soils on a map, describe and identify the soils, evaluate present and potential soil productivity, and

describe and identify the soils, evaluate present and potential soil productivity, and correlate the new soils information with past 3rd Order surveys.

Supplemental soil surveys present information which delineate the soils on a soils map, describe and identify the soils, evaluate present and potential soil productivity, and correlate the new soils information with past 3rd Order surveys. Supplemental soil surveys are contained in appendix 2-3B. Plate 2-4 illustrates the soils, soil boundaries and soil pit locations within the proposed culvert expansion area as referenced by Appendix 2-3B.

Soils in Crandall Canyon were previously mapped (Order III) by the US Forest Service. North aspect soils on the south side of Crandall Creek are part of the Curecanti-Elwood-Duchesne Families Complex (map unit 107) and Bundo-Lucky Star-Adel Families Complex (map unit 711). In addition to these soil complexes, two small inclusions (map units A and B) of alluvial/colluvial soils were identified, described and mapped. These inclusions are soils that have been marked for salvage during construction of the culvert expansion project.

Soil pit TH-2 was hand excavated on the south face of Crandall Canyon directly across from the current load-out facility. This pit was located near the proposed disturbed area boundary which represents north aspect soils on the south face of Crandall Canyon. The soil generally consists of sandy loam to cobbly loam and included a 0.13' thick organic horizon. Sandy loam soils were shown to primarily to extend to approximately 1.10' in depth. Soil depth was limited to 1.85' at this location where weathered bedrock was encountered.

Pit description and horizon designations are given in Appendix 2-3B. Soil horizons were sampled and analyzed for the parameters as required by the Divisions soil and overburden guidelines¹ for pit TH-2. Laboratory data sheets are included in Attachment A of the MRP appendix. Based on the analyses results, the physical and chemical profile of the soils generally fall within the acceptable ranges as required by the Division's guidelines.

Findings:

The requirements of this section of the regulations are considered adequate.

¹Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, Leatherwood and Duce, 1988.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

During culvert installation and pad construction, topsoil was removed from Map Unit C (Figure 8B) in preparation for the permanent coal storage area. However, during coal storage and stockpiling activities, coal was pushed up beyond area C where topsoil had not been stripped. As a result, Notice of Violation N98-45-1-1 was issued for failure to conduct mining and reclamation operations only as prescribed in the approved mining and reclamation plan and failure to remove topsoil from an area to be disturbed.

The amendment sufficiently presents procedures for safeguarding soil resources of the existing hillside that is adjacent to the southern flank of the coal pile. Soil salvage and stockpiling operations are adequately described as follows:

- Protect and clean the coal-affected, unprotected topsoil on the hillside.
- Based on 8 inches of topsoil depth, approximately 160 cubic yards of soil will be salvaged from the remaining 0.15 acre hillside area.
- Topsoil salvaged from the coal pile expansion area will be stored in Stockpile #4.
- The amendment updates soil salvage volumes for soil removed during culvert installation to expand across Crandall Canyon Creek.

Protect and clean the coal-affected, unprotected topsoil on the hillside. Marker posts have been placed around the previously undisturbed topsoil area which has been covered with coal until the coal can be removed. The posts will serve as a visual marker for equipment operators. Prior to soil salvage, coal will be removed from the undisturbed soil surface and the surface vacuumed to remove any remaining coal and coal fines.

Approximately 160 cubic yards of soil will be salvaged from the 0.15 acre area. Topsoil will be removed from the hillside area that was and could potentially be affected by the coal pile. Salvage is anticipated during the next two weeks and will be dependent on accessibility of the coal stockpile area. Based on previous soil investigations (MRP Appendix 2-3B), soil depths on the southern hillside range from 8 to 12 inches of topsoil depth. Approximately 160 cubic yards of soil will be salvaged from the 0.15 acre hillside, with actual soil salvage dependent on topsoil depth and field examination during salvage. A soil specialist will be available to insure that optimal soil salvage of the best available material occurs.

Topsoil salvaged from the coal pile expansion area will be stored in Stockpile #4. Topsoil salvaged from the southern hillside adjacent to the coal pile will be hauled and stockpiled on the existing soil stockpile #4 located at the mouth of Crandall Canyon. After the soil has been placed on the stockpile, the surface will be roughened and the pile mulched and seeded as approved by the Division.

The amendment updates soil salvage volumes for soil removed during culvert installation to expand across Crandall Canyon Creek. Excluding the current amendment to salvage soil from the coal pile expansion area, Topsoil salvaged during culvert expansion occurred in 6 distinct areas as shown on Figure 8B. These areas include those areas originally identified in the MRP (Map Units A, B, & C) and three additional areas (Map Units D, E, & G) identified during culvert expansion as follows:

- Unit A - the area south of the warehouse identified as the north slope area.
- Unit B - the south slope bench area.
- Unit C - the south slope of the adjacent hillside to the coal pile area.
- Unit D - the upper west end of the pad where deep soils were identified for salvage.
- Unit E - the rocky point that was cut during yard expansion, which is located immediately east and contiguous to Unit D (N98-45-3-1 and N98-39-3-1). Topsoil was removed from this hillside without the supervision of Pat Johnston and is not included in Pat's soil salvage report. Nielson Construction Project Manager, Mark Greenhaulgh, oversaw the topsoil removal and stockpiling
- Unit G - a narrow strip along the south side of the road and the old loadout site and from the area that was disturbed during sediment pond construction.

Between all salvage areas, 3880 CY of topsoil was salvaged and placed in stockpile #4 for use during reclamation. Original projections estimated 3480 CY of topsoil was available for salvage during the culvert expansion project.

Findings:

The requirements of this section of the regulations are considered adequate.